

*B. limbatus* oviposit in the partly opened pods of *Leucaena*, *Pithecollobium* and various species of *Acacia*. No eggs were seen deposited upon the pods.

The seeds are irregularly pyramidal broadest and flattened at the summit, about 4 mm. broad and 5 mm. long with a peculiar scar-like structure at the summit. The rest of the surface of the seed is covered with small masses of a soft, reddish-orange waxy substance from which the annatto of commerce is derived, the source of most commercial cheese and buttercolor and of some inferior varnish stains and dyes for silk. The eggs are deposited singly upon the seed and a single *Bruchus* is nourished by a seed. The cotyledons are broad and foliaceous disposed between thick masses of soft brittle albumen which is largely consumed by the larva during its development as in the case of the *Bruchidae* attacking the seeds of *Hibiscus*, *Ipomoea* and *Convolvulus*.

The eggs are nearly hemispherical, but little flattened by the copious cement substance and show but little reticulation on the surface. The larvae as usual bore directly into the seed when emerging from the egg.

The present species may be expected to continue breeding indefinitely in the annatto seeds as long as they are kept at a temperature high enough, but little injury is done to the seeds so far as the coloring matter is concerned. Their presence, however, is undesirable and they would be likely to destroy seed designed for planting. The maceration of the seed in boiling water in extracting the color would doubtless destroy the insects contained in the seed.

### 2. *Retarded development in Eurytoma rhois.*

What was believed to be this species was found very commonly by Miss Marion Van Horn in the seeds of *Rhus glabra* and *R. typhina* during the winter of 1921-22 in the vicinity of Washington. The material collected in January had the larvae full-fed and in a very thin membrane cocoon lining the seed cavity. The material was brought into the laboratory of the Division of Stored Product Insects and held for breeding out. Few adults emerged, but on the examination of the seeds in February 1923 a considerable part of them had transformed and died without emerging probably owing to the excessive heat and dryness of the laboratory. There were also in the seeds a considerable number of living full-fed larvae. There is then in this species of phytophagous chalcid a phenomenon of retarded development such as has been recorded for the clover seed chalcid and some of the Opiine *Braconidae*. It is likely that most of the seed chalcids will be found to have the same ability to remain dormant in the full-fed larva for extended periods under adverse conditions of drought or subnormal temperatures and this will need to be guarded against in the control and quarantine of such insects. This phenomenon is doubtless far more common than has been recorded for it is questionable if insects in regions with a variable winter climate or those arid regions where effective rainfall may be absent for a year or more could survive if compelled to depend upon steady straightforward development in conformity with the calendar.

The seeds of *Ceanothus americanus* are infested in this vicinity by a seed chalcid not yet bred. As in other cases the seeds often show no external sign of infestation. The larva completely destroys the seed leaving only the coverings.

### 3. *Pupae of the walnut hull maggot living two years (Rhagoletis suavis Loew).*

During the fall of 1920 the writer secured many walnut hull maggots in and near Glen Echo, Maryland. The puparia from these were brought into the laboratory of the Division of Stored Product Insect investigations. Emergence of 23 adults was noted on March 8, 1921. From that time until June 21 scattering emergence continued, usually not more than one

each day. The material, having become badly infested by mites, was then fumigated. Another small lot was overlooked and remained uncared for until the latter part of the winter 1921-22 when several puparia were found to contain pupae in a living condition. An effort was made to secure emergence from this lot by keeping them moist but without success. Several pupae remained alive until the latter part of the summer of 1922 but all were dead by the middle of November 1922, thus remaining alive as pupae for nearly two years. This material had been left in glass without soil. No inhabited room would seem to be much more unfavorable for dipterous pupae than this laboratory since in the winter it is overheated and the air is exceedingly dry, the temperature reaching 80° to 85°F. daily. Under certain conditions, then, walnut maggots may not complete their transformations in a single year but can remain in the puparium for two years if not more. While this observation was fragmentary, undoubtedly this is normal to the insect's life history, since a species dependent on an uncertain crop such as the nuts of the walnut and butternut could hardly survive if a single year's failure of its food would starve it out. This result would be avoided if some pupae held over to another summer or longer.

F. P. KEENE of the Pacific Coast Station of the Division of Forest Insects made a few remarks on the control of the pine bark beetles in Southern Oregon. During the past year the insect damage dropped 72%. Mr. Keene exhibited a chart showing the damage to the trees in Southern Oregon and Northern California caused by insects and fire.

CHAS. T. GREENE, *Recording Secretary.*

#### AN APPEAL FOR AID TO AUSTRIAN SCIENTISTS

There has recently been referred to the WASHINGTON ACADEMY OF SCIENCES a report on the condition of Intellectual Life in Austria, from the committee on Intellectual Cooperation of the League of Nations. This was referred by the Board of Managers to a committee consisting of A. S. HITCHCOCK, VERNON KELLOGG, and H. L. SHANTZ, who have been authorized by the Board to issue the following statement.

The report on intellectual life in Austria outlines the deplorable conditions at the universities, the very meager salaries (in depreciated crowns) received by the professors, and the high cost of living. Attention is called to the work of the Academy of Sciences at Vienna, which institution has been obliged to discontinue subscriptions to publications and to cease printing reports of its proceedings.

Relief along certain lines is now being afforded. The American Relief Administration is still continuing a so-called "professors' mess" which is providing a daily meal of excellent quality to more than three hundred professors and instructors at a merely nominal price. Although the American Relief Administration has given up all of its other work (such as child feeding) in Austria it still carries on this special relief for intellectuals in Vienna, Graz, and Innsbruck, that is, in each university city. The Rockefeller Foundation is just making arrangements to set up a considerable number of "fellowships" to assist the younger men of the Austrian university faculties. In addition, the Foundation is making some financial provision for the purchase of laboratory equipment and supplies in the laboratories of medical schools. It has also been arranged to pay subscriptions to American medical journals for these medical schools.